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River System

The Ukraine as a whole consists of portions of the basins of the Rivers Dnieper (with its tributary the Pripet), Dniester, Bug, and Donets, the last named being the largest affluent of the Don. 133

The *Dnieper*, which rises in the Government of Smolensk, has a total length of about 1,410 miles, and drains an area of 202,140 square miles. It first touches Ukrainian territory at Loyev on the western border of Chernigov, and thence flows in a south-easterly direction to Yekaterinoslav, in a shifting channel which varies greatly in depth and breadth. At Yekaterinoslav the river turns south and then south-west, forming a succession of rapids, so that navigation in this part is only possible when the river is in flood. Artificial canals enable small vessels to proceed when there is low water in the channel. The Dnieper enters the Black Sea below the town of Kherson, by a *liman*, into which the Bug also discharges. 133 487 [502]

The chief tributaries of the Dnieper are: on the right bank, going from north to south, the Berezina, which runs through the Government of Minsk; the Pripet, with its many affluents, among them being the Styr and the Strumen, all of which overflow their banks and help to form the system of marshes which is more fully described in *Russian Poland*, No. 44 of this series (p. 15), and the Ingulets, which flows a little above Kherson into the Dnieper near its outlet to the Black Sea. 133

On the left bank the chief tributaries are the Sosh; the Desna, which flows through Chernigov into the Dnieper just above Kiev; and the Samara, which joins the river at Yekaterinoslav.

There is a regular service of passenger steamers on the Dnieper both above and below the rapids, and also along the Pripet as far as Pinsk. [505]

The *Dniester* rises in Austrian Galicia, and only the last 515 miles of its course, with a drainage area of 16,500 square miles, belong to Russian territory. It reaches the Ukraine provinces near Kamenets Podolsk,

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133 and then forms the frontier line between the Governments of Podolia and Kherson and the neighbouring province of Bessarabia. It receives no very important tributaries in the Ukraine, though there is a fair number of smaller ones. Navigation is interrupted by the [502] Yampol rapids. For ordinary river craft an artificial canal affords a passage here, but steamboats cannot pass upstream. The depth of the water has lately been increased by a more scientific system of regulation.

The *Bug* rises in Russian Poland and reaches the Ukraine near Vlodava, to the north-west of Volhynia. It forms for some distance the boundary between the Ukraine and Russian Poland, and then flows through Austrian Galicia into the Ukraine at Volochysk. Its winding course follows a south-easterly direction, entering the Black Sea by a *liman*.

The chief tributaries of the Bug within the Ukraine provinces are, on the right bank, the Kedyma and the Chichekleya; and on the left bank the Ingul.

The *Donets* rises in the Government of Kursk, and enters the Ukraine to the north of Kharkov. It then flows to the south-east, leaving the Ukraine at the extreme north-eastern corner of Yekaterinoslav.

(3) Climate

132 Climatic statistics should generally be regarded as approximate.

The following recent figures are available for the South-west Territory—Tarnopol, although actually in Galicia, being taken as typical of the south-west of Volhynia, Berdichev of the south-east of Volhynia and the central part of the Government of Kiev, and Volkovints and Kamenets Podolsk of the Government of Podolia:

	Average Temperature (Fahrenheit).		
	January.	*July.*	*Year.*
Tarnopol . . .	22·5°	66·0°	44·1°
Berdichev . . .	22·3°	65·5°	45·0°
Volkovints . . .	20·5°	65·9°	44·4°
Kamenets Podolsk .	26·1°	68·5°	47·5°

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The navigable length of the principal rivers is as follows: 487

	For Shipping. Miles.	*For Rafting only. Miles.*
Dnieper . .	1,250	136
Desna . .	537	166
Dniester . .	521	35

All the above-mentioned waterways suffer in common from four serious defects. (1) They are frozen for a considerable period of the year. In the basin of the Dnieper traffic was only possible in the first ten years of this century for an average of 230 days above the rapids and 250 below. Other rivers are in a similar case. (2) The volume of water falls rapidly in summer, and in dry seasons lack of water impedes navigation seriously. (3) Wholesale cutting down of the forests on the banks has led to alteration of the beds of the rivers and the splitting up of the channels. (4) Works for the improvement of navigation scarcely exist, not even the most urgent having been undertaken. 487 502

The principal cargoes carried are breadstuffs, wood, and coal. Cereals are embarked in great quantities on the lower Dnieper and Southern Bug for shipment abroad from Kherson and Nikolaev. The upper Dnieper and the Dniester carry timber. 505 439

Navigable canals do not exist in the Ukraine. Should the scheme for a Dvina-Dnieper canal materialize, it would have a noticeable commercial effect upon the towns of Kiev, Yekaterinoslav, Alexandrovsk, and Kherson. 503

(c) *Railways*

Railway System.—There are in the Ukraine three great railway centres, viz. Kiev, Kharkov, and Yekaterinoslav. 496

1. From Kiev a line runs in a westerly direction to Sarny and Kovel, continuing thence to Cholm and Warsaw.

A second line goes in a north-easterly direction to Bakhmach, thence *via* Kursk and Orel to Moscow.